

**AMENDMENTS TO THE CLAIMS**

Please amend Claims 1 and 10 as follows, without prejudice or disclaimer to continued examination on the merits:

1. (Currently Amended): A method of automatically mapping network addresses of a first protocol for a plurality of network elements in a first network to network addresses of a second protocol, comprising the steps of:

defining a table maintained in each network element of the plurality of network elements;

wherein the table maintained in each network element of the plurality of network elements is built automatically;

assigning an address corresponding to the first protocol for each network element of the plurality of network elements;

assigning an address corresponding to the second protocol for each network element of the plurality of network elements;

associating the addresses corresponding to the first and second protocols within the table for each network element of the plurality of network elements, the second protocol being a different protocol than the first protocol;

advertising an association of the addresses corresponding to the first and second protocols, allowing each network element of the plurality of network elements to build the table; and

wherein each of the network elements utilize the first protocol addresses to transmit data destined for other network elements via the first network,

wherein the first protocol is Internet Protocol (IP) and the second protocol is Transport Identifier (TID), and wherein the addresses corresponding to the Internet Protocol (IP) are mapped to addresses corresponding to the Transport Identifier (TID).

2. (Previously Presented): The method of claim 1, further comprising the steps of:

associating an update timer with the first protocol address for each network element in the first network;

propagating the first protocol address from each network element in the first network at periodic intervals;

resetting the update timer associated with each network element in the first network upon propagation of the first protocol address from that network element; and

removing a network element from the table if the update timer for that network element reaches a pre-determined count value.

3. (Previously Presented): The method of claim 2, further comprising the step of defining a port number for each network element in the first network.

4. (Previously Presented): The method of claim 3, wherein the first network is coupled to a second network, the method further comprising the step of associating a port number with the network to which the network element is coupled.

5. (Previously Presented): The method of claim 2, wherein the first network is configured in a ring topology.

6. (Previously Presented): The method of claim 2, wherein the first network is a point-to-point network.

7. (Previously Presented): The method of claim 5, wherein the first network is a SONET ring network and the first network protocol comprises the Internet protocol operating over a SONET Data Communications Channel protocol.

8. (Previously Presented): The method of claim 2, further comprising the step of maintaining a status of each network element is in the table.

9. (Previously Presented): The method of claim 2, wherein the status of each network element comprises one of new node, updated node, and deleted node.

10. (Currently Amended): A method of associating a network address of a network element within a SONET ring network to a second network utilizing Internet Protocol addressing, the method comprising the steps of:

assigning a Transport Identifier address to each of a plurality of network elements within the SONET network;

assigning an Internet Protocol address to each of a plurality of network elements within the SONET network;

advertising an Internet Protocol address of a gateway node coupling the SONET network to the second network;

transmitting a message to the gateway node, the message including a Transport Identifier address of the network element to be accessed;

maintaining a table in the gateway node that specifies respective Transport Identifier addresses with associated Internet Protocol addresses for each network element within the SONET ring network;

wherein the table maintained in each network element within the SONET ring network is built automatically; and

transmitting the message to the network element whose Internet Protocol address corresponds to the transmitted Transport Identifier address.

11. (Previously Presented): The method of claim 10, further comprising the steps of:

associating an update timer with each network element in the SONET ring network;

resetting the update timer associated with each network element upon propagation of a Transport Identifier address from that network element; and

removing a network element from the table if the update timer for that network element reaches a pre-determined count value.

12. (Previously Presented): The method of claim 11, wherein the SONET ring network implements an Internet protocol operating over a SONET Data Communications Channel protocol.

13. (Previously Presented): The method of claim 11, further comprising the step of maintaining a status of each network element in the table.

14. (Previously Presented): The method of claim 13, wherein the status of each network element comprises one of new node, updated node, and deleted node.

15. (Previously Presented): The method of claim 14, wherein the table comprises a plurality of entries including node Transport Identifier address, Internet Protocol address, and status information for each network element in the SONET ring network.

16. (Previously Presented): The method of claim 1, wherein the table is empty upon initiation.

17. (Previously Presented): The method of claim 10, wherein the table is empty upon initiation.